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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,553	12/11/2003	Wai T. Lam	34826-1014	7752

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EXAMINER

PATEL, HETUL B

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,553	LAM ET AL.	
	Examiner	Art Unit	
	Hetul Patel	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 10-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communication filed on March 27, 2006. This amendment has been entered and carefully considered. Claims 6-9 are cancelled; claims 1-3, 5, 10-12 and 14-24 are amended and claims 25-34 are newly presented for examination.
2. Applicant's arguments filed on March 27, 2006 have been fully considered but they are not deemed to be moot in view of new ground rule rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 10-24 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The elements "the first processor" and "the second processor" for performing specific steps as disclosed in independent claims 10, 18 and 32 are not described in the specification of the instant application. Claims 11-17, 19-24 and 33-34 are also rejected for the same reason(s) as they further limit the claims 10, 18 and 32.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 10-11, 13, 18, 20, 25-26, 28-29, 31-32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Polfer et al. (USPN: 6,665,779) hereinafter, Polfer.

As per claim 1, Polfer teaches a method for replicating data from a storage device (i.e. the in Fig. 1), comprising identifying one or more allocated storage locations (i.e. the blocks B0-B3 in Fig. 3A; B0-B23 in Fig. 3B; BE0-BE23 in Figs. 5A-5B) on the storage device (i.e. 100 in Fig. 1A) based, at least in part, on a file system associated with the storage device (e.g. see Figs. 1A, 3A-3B and 5A-5B). Polfer further teaches that each block (i.e. each of BE0-BE23 in Fig. 5B) in the storage device (i.e. 500 in Fig. 5B) includes a flag (i.e. in Fig. 5B) indicating whether the corresponding block is to be backed up/replicated, i.e. steps of reading and recording are inherently taught by the Polfer because in order to determine whether the “used” or “unused” flag should be assigned to a particular block, the particular block needs to be read (i.e. I/O access) first to determine whether data exist in it or not and then each block get recorded as either the “used” or “unused” flag based on if it's backed up, i.e. read, i.e. I/O access is

performed (e.g. see Col. 8, lines 21-31 and Fig. 5B). Polfer further teaches about generating, based on the recorded I/O access information, a list of data blocks on the storage device that contain valid data; and replicating the data blocks that contain valid data (e.g. see Col. 8, lines 32-40 and Fig. 5B).

As per claim 2, Polfer teaches the claimed invention as described above and furthermore, Polfer teaches that at least one read operation includes reading metadata (i.e. flags) associated with one or more files (i.e. blocks of clusters/data) on the storage device (e.g. see Col. 5, lines 15-23).

As per claims 10 and 11, see arguments with respect to the rejection of claims 1-2, respectively. Claims 10 and 11 are also rejected based on the same rationale as the rejection of claims 1-2, respectively.

As per claims 18 and 20, see arguments with respect to the rejection of claims 1-2, respectively. Claims 18 and 20 are also rejected based on the same rationale as the rejection of claims 1-2, respectively.

As per claims 26, 29 and 32, see arguments with respect to the rejection of claims 1-2. Claims 26, 29 and 32 are also rejected based on the same rationale as the rejection of claims 1-2.

As per claim 13, Polfer teaches the claimed invention as described above and furthermore, Polfer teaches that a computer associated with the storage device (e.g. see Col. 5, lines 30-40).

As per claim 25, Polfer teaches the claimed invention as described above and furthermore, Polfer teaches that the file system is structured on a file level (e.g. see Col. 5, 33-38).

As per claim 28, 31 and 34, Polfer teaches the claimed invention as described above and furthermore, Polfer teaches that the list and the replicated data blocks are stored in a memory (i.e. a backup medium) (e.g. see Col. 8, lines 32-40 and Fig. 5B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 12, 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polfer in view of Long et al. (USPN: 2003/0195865) hereinafter, Long.

As per claim 3, Polfer teaches the claimed invention as described above. However, Polfer does not teach that the metadata includes the name of the file, access permissions to the file, the date of creation of the file, and dates of modification of the file. Long, on the other hand, teaches that information about files is generally referred to as the file system "metadata". Examples of metadata associated with files are: (1) a document's name, creation date, last modified date (2) permissions for accessing the document, and (3) the folder path for accessing the document (e.g. see paragraph

[0010]). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to modifying Polfer's method by including information about file, such as name, access permission, date of creation and date of modification, as taught by Long. In doing so, it can be determined which specific data block(s) are valid and based on that those data block(s) is/are replicated. Therefore, it is being advantageous.

As per claims 12, 21 and 27, see arguments with respect to the rejection of claim 3. Claims 12, 21 and 27 are also rejected based on the same rationale as the rejection of claim 3.

6. Claims 4-5, 14-17, 19 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polfer in view of Neufeld (USPN: 5,668,971).

As per claim 4, Polfer teaches the claimed invention as described above. However, Polfer failed to teach the further limitation of cleaning a cache on a computer associated with the storage device before performing any read operations. Neufeld, on the other hand, teaches about cleaning/flushing the cache memory (i.e. the combination of 24 and 28 in Fig. 1) prior to performing any read operations (e.g. see Col. 3, lines 58-65). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the cleaning step of Neufeld in the method taught by Polfer. In doing so, it will prevent any attempts to fill (invalid) data from the cache memory in response to the read request.

As per claim 5, Polfer teaches a method for replicating data from a storage device as described above in the rejection of claim 1. However, Polfer failed to teach the further limitation of cleaning a cache on a computer associated with the storage device before performing any read operations. Neufeld, on the other hand, teaches about cleaning/flushing the cache memory (i.e. the combination of 24 and 28 in Fig. 1) prior to performing any read operations (e.g. see Col. 3, lines 58-65). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the cleaning step of Neufeld in the method taught by Polfer. In doing so, it will prevent any attempts to fill (invalid) data from the cache memory in response to the read request.

As per claims 15 and 19, see arguments with respect to the rejection of claim 4. Claims 15 and 19 are also rejected based on the same rationale as the rejection of claim 4.

As per claims 14, 16-17 and 22-24, the combination of Polfer and Neufeld teaches the claimed invention as described above. The further limitations of having, the (first) processor residing on the computer, the (second) processor is configured to manage the storage operations of the computer, the (second) processor comprising the filter driver (i.e. the software program) and, the (second) processor is part of a storage management system, are inherently embedded in the system taught by Polfer.

7. Claims 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polfer in view of van Rietschote (USPN: 6,757,778) hereinafter, Rietschote.

As per claims 30 and 33, Polfer teaches the claimed invention as described above. However, Polfer failed to teach that the file system is associated with a virtual storage device used to manage storage of data on the storage device. Rietschote, on the other hand, teaches about associating the file system with a virtual storage device used to manage storage of data on the storage device (e.g. see the abstract). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the teachings of Rietschote in the method and system taught by Polfer since if the storage management system supports a set of storage commands for the virtual storage devices, the storage management system can schedule various applications/operating systems for execution on multiple processing hardware, and present a consistent view of storage for a given application/operating system, independent of which of the multiple processing hardware on which the application/operation system is executing.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 2186


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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